Field Jean Pautler 520310

1992 In-House

Diamond Drill Report

on the

AVALANCHE PROPERTY

NTS: 92J/10W

Latitude 50°33'N

Longitude 122°54'W

Lillooet Mining Division

Owner:

Teck Corporation in trust for:

Toscana Resources Ltd.

1104 - 750 West Pender Street

Vancouver, B.C.

V6C 2T8

Operator:

Teck Exploration Ltd.

#350, 272 Victoria Street,

Kamloops, B.C.

V2C 2A2

Jean Pautier December, 1992

SUMMARY:

This report describes the results of Teck's 1992 drill program on the Avalanche property, located 25 km north of Pemberton, B.C. The 29 unit property was optioned from Toscana Resources Ltd. as a volcanogenic massive sulfide target.

The property is underlain by a Jurassic - Cretaceous? volcano-sedimentary assemblage characterized by a felsic dorse and related quartz eye pyroclastics, a laterally equivalent decitie pyroclastic unit and an overlying andesite unit. A major northwest trending anastomosing shear zone, the "Grizzly Shear Zone", bisects the Avalanche property. The Grizzly Shear Zone is a high angle reverse fault with the southwest side down. A large pyritic quartz sericite schist \pm chlorite, \pm clay, alteration zone is evident at the top of the quartz porphyry section.

A total of 1,419m of diamond drilling in 8 holes was completed in 1992. The drill program tested two base metal enriched horizons, identified in the 1991 drill program ("Upper and Lower Horizons"), and a new mineralized zone ("New Zone") discovered in 1992. The "New Zone" consists of a 35 cm wide massive sphalerite, chalcopyrite vein grading 33% Zn, 6% Cu, 25 g/t Ag.

Unfortunately, the "New Zone", intersected in AV92 DDH-2 to -5, dissipates along strike in both directions as well as down dip. The grade decreases tremendously in all directions from the main surface exposure and the zone never reaches significant widths. Typical intersections are 1.5% Zn, 0.2% Cu. The minor base metal intersections in the top of AV91 DDH-4 (0.2% Zn - 12m) and AV92 DDH-6, may also represent the "New Zone" which further substantiates the dispersement of base metals away from the surface showing.

The "Lower Horizon" intersections in AV92 DDH-1 and AV91 DDH-5 (0.75% - 17m) appear to be related to a fault approximately 700m southwest of and subparallel to the Grizzly Shear Zone that dips steeply northeast. The "Lower Horizon" intersections in AV92 DDH-6, -7 and AV91 DDH-2, -4, -10 (0.25% Zn - 17m) appear to represent stringer type mineralization related to the Grizzly Shear Zone.

The results of the drill program were disappointing and an inadequate amount of prospective ground remains in which a significant deposit could be hested. It appears that mineralization on the property may be related to a V.M.S. system but lacked an adequate depositional environment. As a result, sulfides were dispersed throughout the hosting stratigraphy with only small, high grade pods and broad base metal enriched zones developed. No further work is recommended at this time.

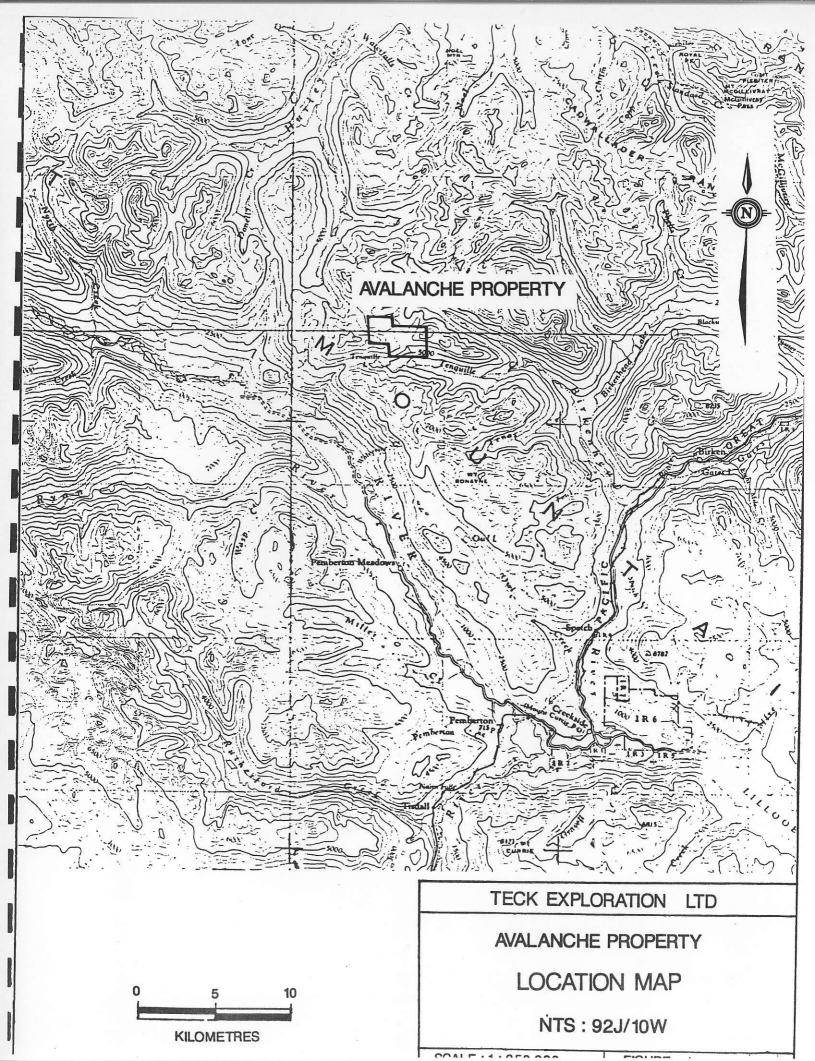
TABLE OF CONTENTS

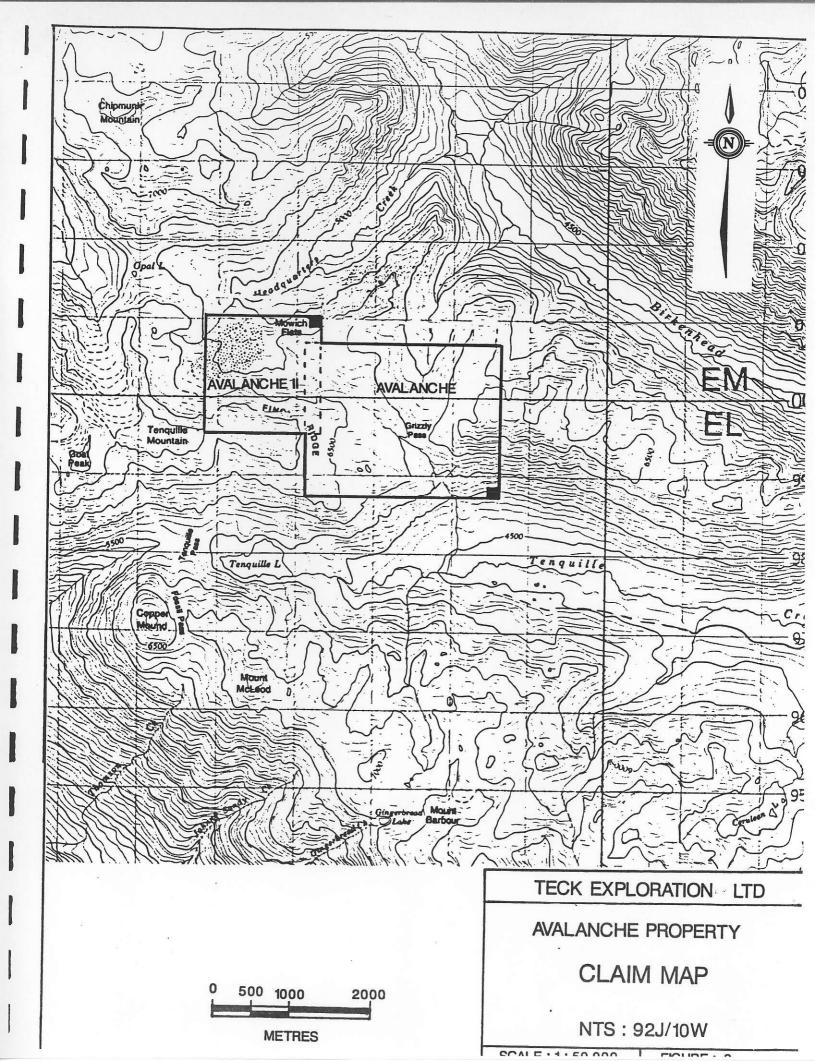
		· · · · · · · · · · · · · · · · · · ·	age
	SUMMARY	······································	1
1.	INTRODUCTIO	ON	1
2.	GEOLOGY	••••••	1
3.	MINERALIZATI	ION	1
	a)	New Zone	. 1
	ii)	Upper and Lower Horizons	2
4.	ENVIRONMEN	ITAL	3
5 .	DIAMOND DRI	ILLING	4
	a) Proced	dure	4
	b) Result	s	4
	AV92 DDH-1		5
	AV92 DDH-2	•••••••••••••••••••••••	6
	AV92 DDH-3	·····	7
	AV92 DDH-4	· · · · · · · · · · · · · · · · · · ·	8
	AV92 DDH-5	·	9
	AV92 DDH-6		. 10
	AV92 DDH-7		. 11
	AV92 DDH-8		. 12
6.	CONCLUSION	IS AND RECOMMENDATIONS	. 13
		APPENDICES	
	Appendix I	Selected References	
	Appendix ii	Geochemical Procedure and Results	
	Appendix III	Environmental Test Results and Standards	
	Appendix IV	Diamond Drill Logs	
	Appendix V	Statement of Expenditures	
	Appendix VI	Statement of Qualifications	

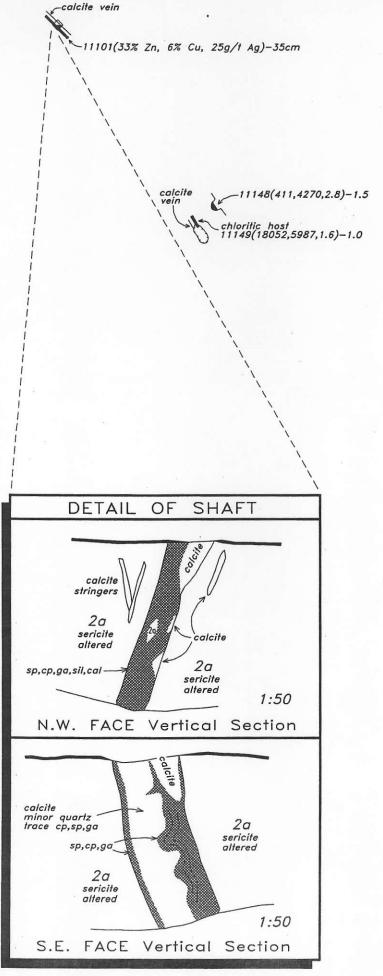
LIST OF FIGURES

Following Page

Figure 1	Location Map (1:250,000)	1
Figure 2	Claim Map (1:50,000)	1
Figure 3	Grizzly Grid - Geology Map (1:2,500) (back pocke	rt)
Figure 4	Sketch of "New Zone" (1:500 and 1:50)	2
Figure 5	Diamond Drill Hole Location Map (1:10,000)	4
Figure 6	Cross-section Through DDH 91-5 and DDH 92-1 (1:1,000)	6
Figure 7	Assay-section Through DDH 92-1 (1:1,000)	6
Figure 8	Cross-section Through DDH 92-2 and 92-3 (1:1,000)	7
Figure 9	Assay-section Through DDH 92-2 (1:1,000)	7
Figure 10	Assay-section Through DDH 92-3 (1:1,000)	8
Figure 11	Cross-section Through DDH 92-4 (1:1,000)	9
Figure 12	Assay-section Through DDH 92-4 (1:1,000)	9
Figure 13	Cross-section Through DDH 92-5 (1:1,000)	0
Figure 14	Assay-section Through DDH 92-5 (1:1,000)	0
Figure 15	Cross-section Through DDH 91-4 and DDH 92-6 (1:1,000) 1	1
Figure 16	Assay-section Through DDH 92-8 (1:1,000)	1
Figure 17	Cross-section Through DDH 92-7 (1:1,000)	2
Figure 18	Assay-section Through DDH 92-7 (1:1,000)	2
Figure 19	Cross-section Through DDH 92-8 (1:1,000)1	3
Figure 20	Assay-section Through DDH 92-8 (1:1,000)	3
	LIST OF TABLES	
Table 1	Diamond Drill Hole Data	4









PLAN VIEW



massive pyrite 11150(1124,8942,7)-0.4-

LEGEND

Sample No. Zn Cu Ag width(m) 11148(411,4270,2.8)-1.5 all values are in ppm

2a.....quartz eye pyroclastic

..... mineralized zone

....open cut

shaft

trench

... pit

FIGURE 4



DATE DRAWN: JAN. 22, 1993 COMPILED BY: J.P. SCALE: 1:500 JOB No: 1396 DWG. NAME: AVA-NZON NTS No: 92J/10

1. INTRODUCTION (Figures 1 and 2)

This report describes the results of Teck's 1992 drill program on the Avalanche property. It is a supplement to the 1991 report which details and/or summarizes all previous work.

The 29 unit Avalanche property is located 25 km north of Pemberton, B.C. (Figures 1 and 2). The closest road access ie 1.5 km southeast of the property. The property is in good standing to the year 2002.

The 1992 program commenced July 21 and concluded September 3, 1992. The program consisted of continued geological mapping and interpretation (to facilitate the selection of the 1992 drill sites), and 1,419m of diamond drilling. Minor environmental testing was also conducted. The drill program tested two base metal enriched horizons identified in the 1991 drill program ("Upper and Lower Horizons"), and a new mineralized zone discovered in 1992 ("New Zone").

2. **GEOLOGY** (Figure 3)

The geological interpretation has not significantly changed since 1991. Consequently, only additional geologiesi observations from the 1992 program will be discussed. Please refer to the 1991 report for a thorough description of the geology.

In summary, the property is characterized by a felsic dome (Unit 3) and related quartz eye pyroclastics (Unit 2a), laterally equivalent to a dacitic pyroclastic unit (Unit 2) and overlain by an andesite unit (Unit 1). This volcano-sedimentary assemblage has been previously mapped by the GSC as Triassic, (Woodsworth, 1977). However, in recent work by the GSC, a younger age is postulated, possibly Jurassic or even Cretaceous, (Murray Journeay, personal communication).

A major northwest trending anastomosing shear zone, the "Grizzly Shear Zone", bisects the Avalanche property. The fault is of probable late Cretaceous to early Tertiary age since it transects all units except for the Tertiary (possibly Miocene) basalts and regolith. The predominant style of deformation is ductile with minor late brittle deformation. A detailed examination of foliations and quartz veins revealed that the Grizzly Shear Zone is a high angle reverse fault with the southwest side down. Three stages of folding are evident in graphitic sedimentary rocks within the shear zone.

A large pyritic quartz sericite schist \pm chlorite, \pm clay, alteration zone is evident at the stratigraphic top of the quartz porphyry section (Units 2a and 3).

The quartz feldspar porphyry flow unit (Urilt 3) appears to be less extensive in the vicinity of the "New Zone" (DDH 2-5) than previously mapped. The quartz sericite schist exposed at this locality appears to have originally been a quartz eye pyroclastic (Unit 2a).

3. Mineralization

a) New Zone: (Figure 4)

A new mineralized zene ("New Zone") was discovered an the property in 1992 at 59+53N/53+25E. The main showing consists of a previously undocumented 3m deep shaft presumed to have been excavated in the 1920's. The shaft exposes a 35 cm wide massive sphalerite, chalcopyrite vein (Sample No. 11101) adjacent to a 40-50 cm wide calcite vein with minor quartz. The mineralization trends 140°/70°SW and the dalcite vein 145°/80°SW.

A small open cut exposes a 1.5m wide silicified, pyritic zone with blebs of chalcopyrite and sphalerite (Sample No. 11148), 30m southeast of and along strike of the shaft. A small pit exposes the calcite vein, albeit narrower, 5m southwest of the open cut. The chloritic host rock is pyritic with trace malachite (Sample No. 11149).

Mineralization can be intermittently traced almost 100m to the southeast of the shaft where an old trench exposes a 40 cm wide zone of massive pyrite (Sample No. 11150). The mineralization could not be traced to the northwest due to poor exposure.

Mineralization from the shaft (Sample No. 11101) grades 33% Zn, 6% Cu, 25 g/t Ag. At the open cut, 30m to the southeast, a chip sample of the 1.5m wide mineralized zone (Sample No. 11148) contained 4,270 ppm Cu, 411 ppm Zn, 2.8 ppm Ag. A 1.0m wide chip sample of the chloritic host to the calcite vein at the pit (Sample No. 11149) ran 5,987 ppm Cu, 18,053 ppm Zn, 1.6 ppm Ag. The 40 cm wide zone of massive pyrite (Sample No. 11150) contained 8,942 ppm Cu, 1,124 ppm Zn, 7.8 ppm Ag.

The above samples were also anomaleus in Mo, Cd and Fe. The maximum Au velue was 80 ppb from the shaft sample (Sample No. 11101). Complete sample results and procedures are tabulated in Appendix II.

ii) Upper and Lower Horizons:

Two base metal enriched horizons ("Upper and Lower Horizons") were identified in the 1991 drill program. The horizons coincide with base metal soil anomalies, air and ground EM conductors and Na₂O depleted horizons, outlined in the 1990-1991 programs. The horizons occur at specific statigraphic intervals and are characterized by high pyrite contents with associated base metals. The two horizons are separated by approximately 80m.

The "Upper Horizon" occurs within the Quartz Eye Pyroclastic unit (Unit 2a) between the Q.F.P. Flow (Unit 3) and Mixed Pyroclastic units (Unit 2), (i.e. at the top of the quartz porphyry section). The "Lower Horizon" is associated with interbedded chert (Unit 2c) within the Mixed Pyroclastic unit (Unit 2).

Significant results from the herizons, obtained during the 1991 drill program, are tabulated below:

1. DDH 5	0.75% Zn - 17m	LOWER HORIZON
1. DDN 5	U./5% ZII - 1/III	LUWER HURIZUN
2. DDH 4	0.3% Zn - 6m	UPPER HORIZON
	0.25% Cu - 2m	UPPER HORIZON
max.	0.1% Cu, 0.2% Zn, 0.05% Pb	LOWER HORIZON STRINGER ZONE
3. DDH 2	0.12% Zn, 0.08% Cu - 5m	UPPER HORIZON

In 1992, several intervals from the 1991 core were analyzed to provide complete sample coverage of anomalous zones. In addition to the values noted above, the "Upper Horizon" intersected in AV91 DDH-4 was found to contain a 12m interval grading 0.2% Zn, and the stringer type mineralization encountered in the bottom of the hole was found to grade 0.05% Zn over 27m, including 10m of 0.08% Zn.

The 1992 re-sampling also increased the significance of other anomalous zones. The "Eva Horizon" encountered in AV91 DDH-7, carries 0.3% Zn across 8m. A stringer zone in the bottom of AV91 DDH-10 contains 0.25% Zn across 17m, including 7m of 0.45% Zn.

4. ENVIRONMENTAL

Three water samples were collected for environmental analysis prior to drilling. The following samples were collected:

Sample 1:

Ferricrete pond

Sample 2:

AV91 DDH-3 (leakage)

Sample 3:

Main Creek (drinking water)

The ferricrete pond is a naturally occurring accumulation of Fe from the large pyritic quartz sericite alteration zone that lies topographically above the pond. The Ph of the pond is 4.00.

Contained leakage from AV91 DDH-3 had a pH of 4.95. The total dissolved solids level was slightly high with 550 mg/l compared to the acceptable limit of 500 mg/l. However, the drill hole and collar area has now been cemented.

The pH of the main creek is 6.15 which is slightly low but adequate for shert term use. The optimum pH for drinking water is 6.5 - 8.3. (The tap water of Sudbury, Ontario had a pH of 5.00 in the late 1970's!)

With the above noted exceptions, the above samples meet the requirements for drinking water. The complete results are tabulated in Appendix III along with the recommended standards for drinking water.

5. DIAMOND DRILLING (Figures 5 - 20, Table 1)

a) Procedure

A total of 1,419m of diamond drilling in 8 holes was completed in 1992. The holes tested two base metal enriched horizons ("Upper and Lower Horizons"), identified in the 1991 drill program and a new mineralized zone ("New Zone"), discovered in 1992. Drilling was carried out between August 4 and August 27, 1992 by Burwash Contract Drilling of Cobble Hill, B.C. A Longyear 38 core drill with BQ wireline tools was utilized.

A total of 212 samplee of core were split and four surface samples nollected and sent to Rossbacher Labs, Burnaby, B.C. The samples were analyzed for Al, Sb, As, Ba, Be, Bi, B, Cd, Ca, Cr, Co, Cu, Fe, La, Pb, Mg, Mn, Hg, Mo, Ni, P, K, Si, Ag, Sr, Ti, W, U, V and Zn using a 31 element ICP package which involves a nitric-aqua regia digestion. Twenty of the above samples were collected from the 1991 drill core in order to provide complete sample coverage of anomalous zones. Thirty-three of the 1992 core samples were analyzed for Au which was accomplished by fire assay with an atomic absorption finish. (All of the 1991 core samples had been analyzed for Au with very poor results.) A 14 element whole rock package was used to analyze 112 of the above 1992 samples for SiO₂, Al₂O₃, Fe₂O₃, MgO, CaO, Na₂O, K₂O, TiO₂, P₂O₅, MnO, BaO, Cr₂O₃, SrO and V₂O₅.

Lab procedures and complete results are outlined in Appendix II. Sample locations and significant Cu, Pb, Zn, Ag, Au results are plotted on the assay sections (Figures 7, 9, 10, 12, 14, 16, 18 and 20).

All pertinent drill data is summarized in Table 1 and drill hole locations are shown on Figure 5. Geological cross sections are shown on Figures 6, 8, 11, 13, 15, 17 and 19. Drill logs are included in Appendix IV. The core is stored on the property at the main ferricrete zone, grid co-ordinates 49+50N/52+10E. Core recovery averaged 90-100%.

b) Results

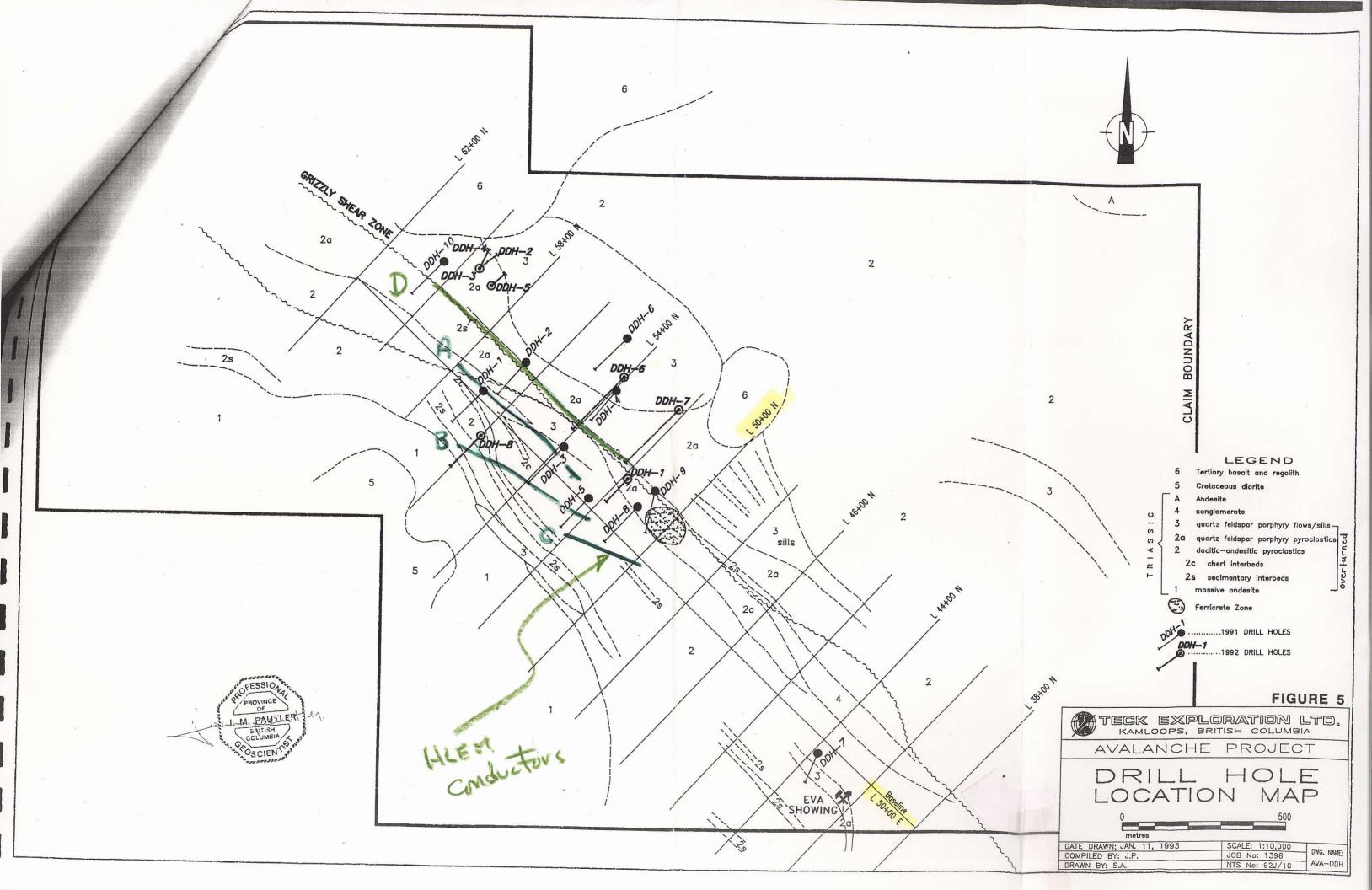
Results of surface mineralization have been discussed under 3, "Mineralization".

A brief description of each of the drill holes follows:

N.B. * denotes a weighted average

TABLE 1:
DIAMOND DRILL HOLE DATA

Hole No.	Grid Location	Elevation	Azimuth	Dip	Total Length	Began d/m/y	Finished d/m/y	Sample Numbers
AV92 DDH-1	51+88N/51+50E	1890 m	220°	-60°SW	191.1 m	06/08/92	08/08/92	11121-11147 11151-11154
AV92 DDH-2	59+55N/52+80E	1926 m	049°	-45°NE	99.7 m	09/08/92	10/08/92	11155-11170
AV92 DDH-3	59+55N/52+80E	1926 m	049°	-70°NE	89.3 m	10/08/92	11/08/92	11171-11183
AV92 DDH-4	59+55N/52+80E	1926 m	026 °	-60°NE	114.9 m	11/08/92	12/08/92	11184-11201
AV92 DDH-5	58+95N/52+70E	1923 m	047°	-50° NE	87.5 m	13/08/92	14/08/92	11202-11218
AV92 DDH-6	54+04N/53+57E	1911 m	226°	-45°SW	322.2 m	15/08/92	19/08/92	11219-11265
AV92 DDH-7	52+15N/54+10E	1850 m	228°	-45°SW	331.0 m	20/08/92	24/09/91	11266-11300
AV92 DDH-8	56+00N/49+22E	1972 m	222°	-45°SW	183.2 m	25/08/92	24/08/92	11301-11316
TOTALS:					1418.9 m			193 Samples



AV92 DDH-1 (Figures 6 and 7)

AV92 DDH-1 tested the down dip extent of the most significant intersection of the 1991 drill program, 17m of 0.75% Zn in AV91 DDH-5 within the "Lower Horizon". The "Lower Horizon" displays a more distal signature along strike to the southeast and diminished base metal values along strike to the northwest of AV91 DDH-5. The hole was collared on the same side of the Grizzly Shear Zone in order to avoid structural problems.

The top of AV92 DDH-1 intersected graphitic sedimentary rocks (Unit 2s) within the Grizzly Shear Zone. The predominant lithology throughout the hole consists of fine dacitic tuffs (commonly ash tuffs) with minor lapilli tuff (Unit 2). Quartz eye (± feldspar) crystal and lapilli tuffs (Unit 2a) are interbedded with the fine tuffs above 140m. The quartz feldspar porphyry (Q.F.P.), Unit 3, commonly occurs as sills throughout the hole and as a large sill or thin flow between 41 and 78m. An andesite dyke cuts the dacitic tuffs near the bottom of the hole.

The "Lower Horizon" was intersected from approximately 50 to 140m, at the top of the Q.F.P. section (Units 2a, 3). The herizon was intersected at the correct stuttigraphic interval and appears to increase in thickness from AV91 DDH-5. However, only minor base metal mineralization was encountered in AV92 DDH-1. The mineralization consists of pyrite - sphalerite stringers with a maximum grade of 1135 ppm Zn over 2.0m. Pyrite - quartz - sericite schists are abundant throughout this horizon and below 80m gypsum is ubiquitoue. A zone around 70m is Na₂O depleted, K₂O enriched with ratios down to 0.004.

It is possible that this mineralized horizon is structurally controlled.

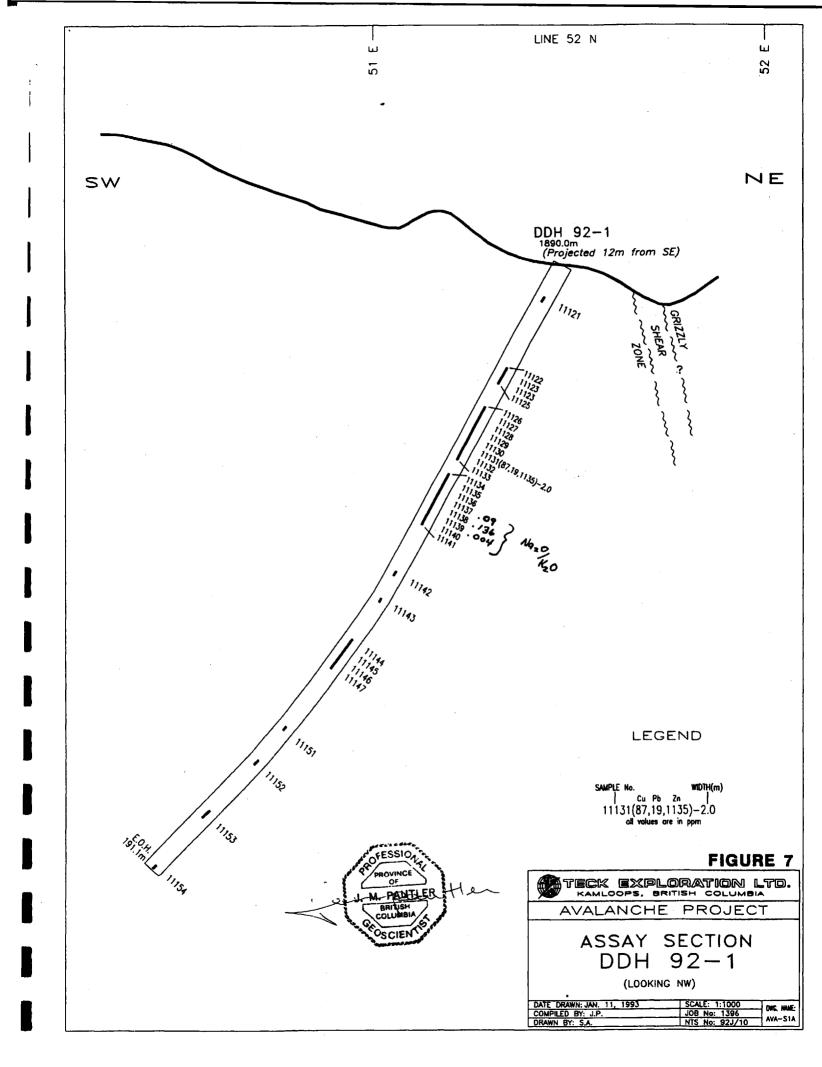
The best results are as follows:

LOWER HORIZON:

51.0 to 53.0m:

2.0m

1.135 ppm Zrt



AV92 DDH-2 (Figures 8 and 9)

AV92 DDH-2 was drilled to test the down dip extent of the "New Zone". The hole was designed to test the mineralization 40m down dip from the surface exposure. Mineralization from the "New Zone" grades 33% Zn, 6% Cu, 25 g/t Ag.

The predominant lithology in AV92 DDH-2 is Unit 2a, quartz eye pyroclastic rocks. Fine andesite to dacite tuffs, with minor lapilli tuff (Unit 2), were intersected from 54.0 to 69.5m. Andesite dykes are common throughout the hole.

The "New Zone" was intersected from 51.3 to 51.8m. It consisted of a 50cm calcite (minor quartz) vein with large angular fragments and disrupted pieces of mineralized quartz eye lapilli tuff host rock. Mineralization within the fragments consists of 10% sphalerite, 5% chaicopyrite and 3% pyrite. The same mineralization also occurs as stringers throughout parts of the vein. The entire 50cm wide zone ran 1.6% Zn, 0.2% Cu, 1.6 g/t Ag with a Na₂O/K₂O ratio of 0.274 (lowest in the hole). The hanging wall and footwall of the vein were not anomalous in base metals. The stratigraphic footwall (overturned section) is weakly carbonitized, quartz flooded and sericitized.

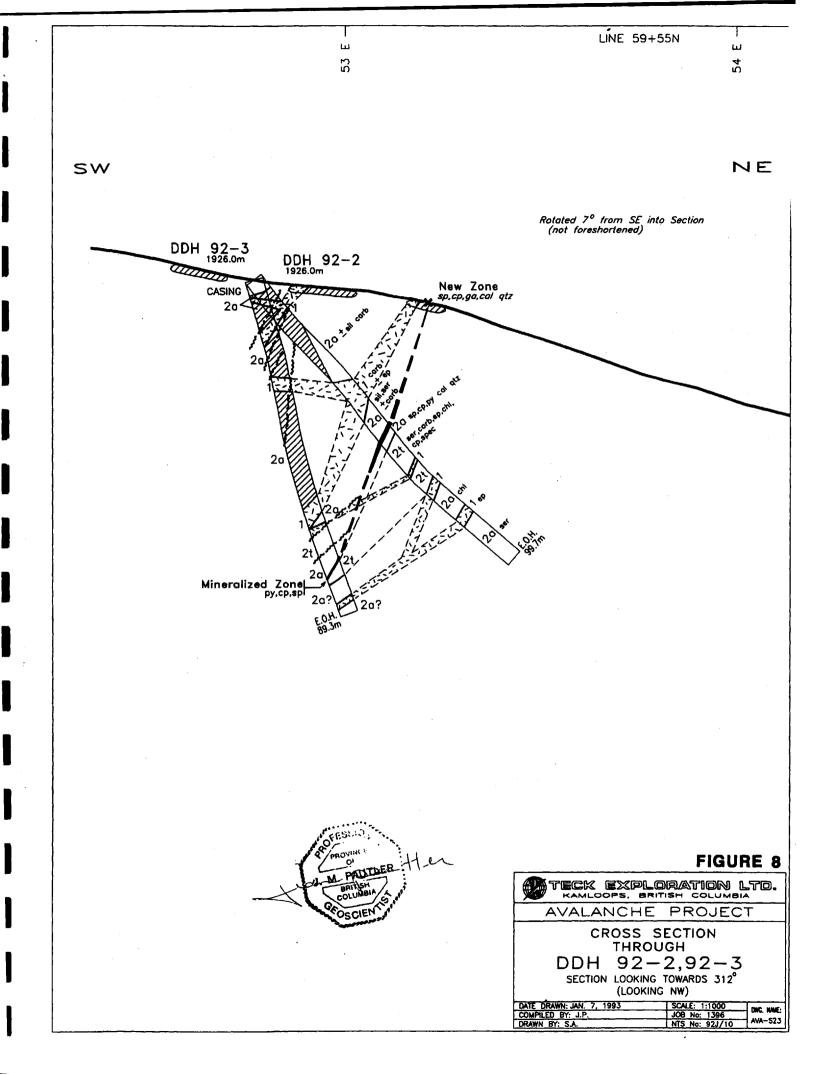
The best results are as follows:

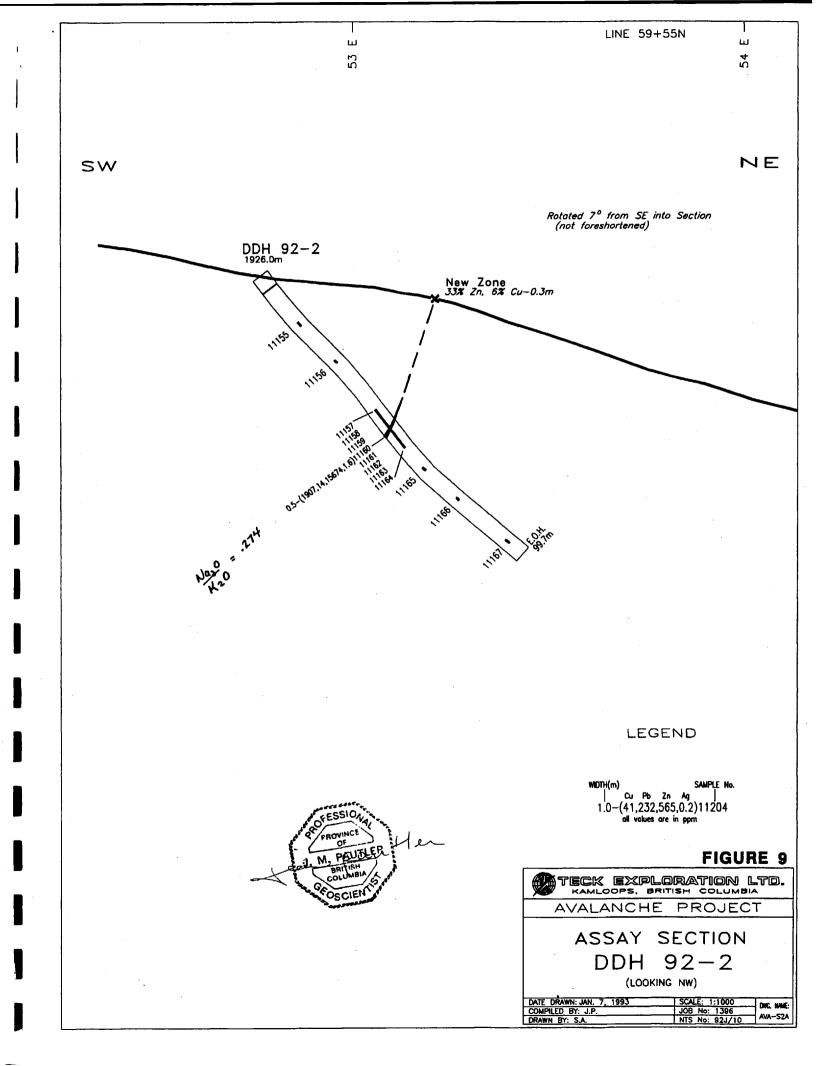
NEW ZONE:

51.3 to 51.8m;

0.5m

15,674 ppm Zn 1,907 ppm Cu 1.6 g/t Ag





AV92 DDH-3 (Figures 8 and 10)

AV92 DDH-3 was drilled from the same set up as AV92 DDH-2 in order to intersect the "New Zone" further down dip, approximately 70m from the surface showing.

The geology of AV92 DDH-3 mimics AV92 DDH-2. The predominant lithology is quartz eye pyroclastic rocks (Unit 2a), with fine andesite to dacite tuff (minor lapilli tuff) interbeds(?) (Unit 2) from 40.1 to 41.7m, 68.0 to 71.7m and 76.8 to 79.2m. The location of the andesite to dacite tuff in AV92 DDH-2 and 3 suggests a dip of 70° SW in this area. Andesite dykes are common throughout the hole.

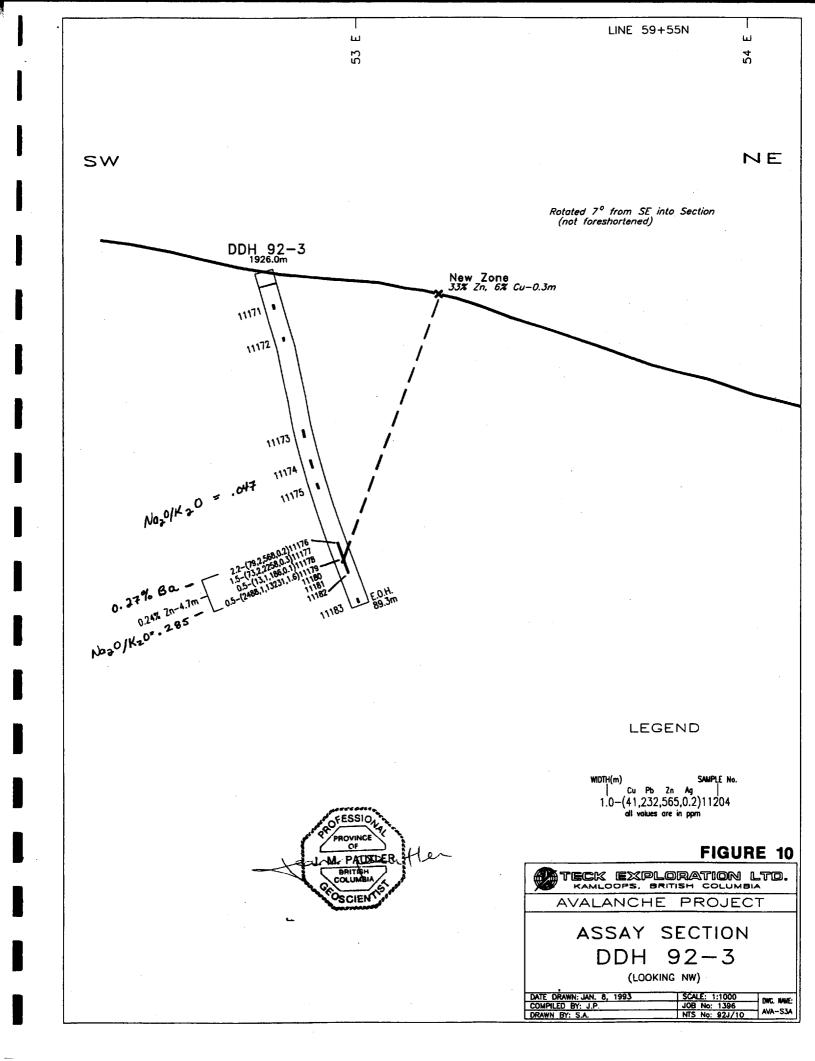
The "New Zone" was vaguely intersected from 76.3 to 76.8m. It occurs as a quartz carbonate flooded zone with pyrite as stringers and bands, and sphalerite as stringers and blebs (commonly with chalcopyrite replacement). Although the zone differs from the surface showing, it is readily recognizable by the abundance of carbonate and its stratigraphic position.

The 50cm wide zone contained 1.3% Zn, 0.25% Cu, 1.6 g/t Ag with a Na_2O/K_2O ratio of 0.285, very similar to the "New Zione" intersection in AV92 DDH-2. Enriched values in BaO (up to 0.27%) were also obtained from this zone. The stratigraphic footwall was also anomalous in Zn. The footwall combined with the "New Zone" returned a value of 0.24% Zn across 4.7m.

2,488 ppm Cu 1.6 g/t Ag

The best results are as follows:

FW/NEW ZONE:	72.1 - 76.8m;	4.7m	0.24% Zn *	
includes:	•		· .	
FOOTWALL:	74.3 - 75.8m;	1.5m	2,258 ppm Zn	
NEW ZONE:	76.3 - 76.8m;	0.5m	13,231 ppm Zn	



AV92 DDH-4 (Figures 11 and 12)

AV92 DDH-4 was drilled from the same set up as AV92 DDH-2 and -3, but rotated 23°N. The hole was drilled to intersect the "New Zone" 30m along strike to the northwest and approximately 60m down dip from the surface showing.

As in AV92 DDH-2 and -3, the predominant lithology of AV92 DDH-4 is Unit 2a, the quartz eye pyroclastic unit. Andesite lapilii tuff with minor fine andesite to dacite tuff (Unit 2) were also intersected towards the bottom of the hole, from 94.5 to 104.7m. Andesite dykes are common throughout the hole.

The "New Zone" was weakly intersected from 72.5 to 73.0m. It occurs as pyrite and sphalerite infillings between fragments in a coarse, siliceous quartz feldspar lapilli tuff. The presumed dip of the zone would be approximately 75°SW. Values up to 1.4% Zn, 0.06% Cu, 1.6 g/t Ag across 0.5m were obtained. The stratigraphic hanging wall also contains 3,357 ppm Zn. The above two samples combined, average 0.55% Zn over 2.4m.

Calcite - base metal stringer type mineralization that may be related to the "New Zone" was encountered between 29.2 and 31.0m. The mineralization included pyrite, sphalerite and chalcopyrite. A 1.8m section assayed 0.17% Zn with 206 ppm Cu.

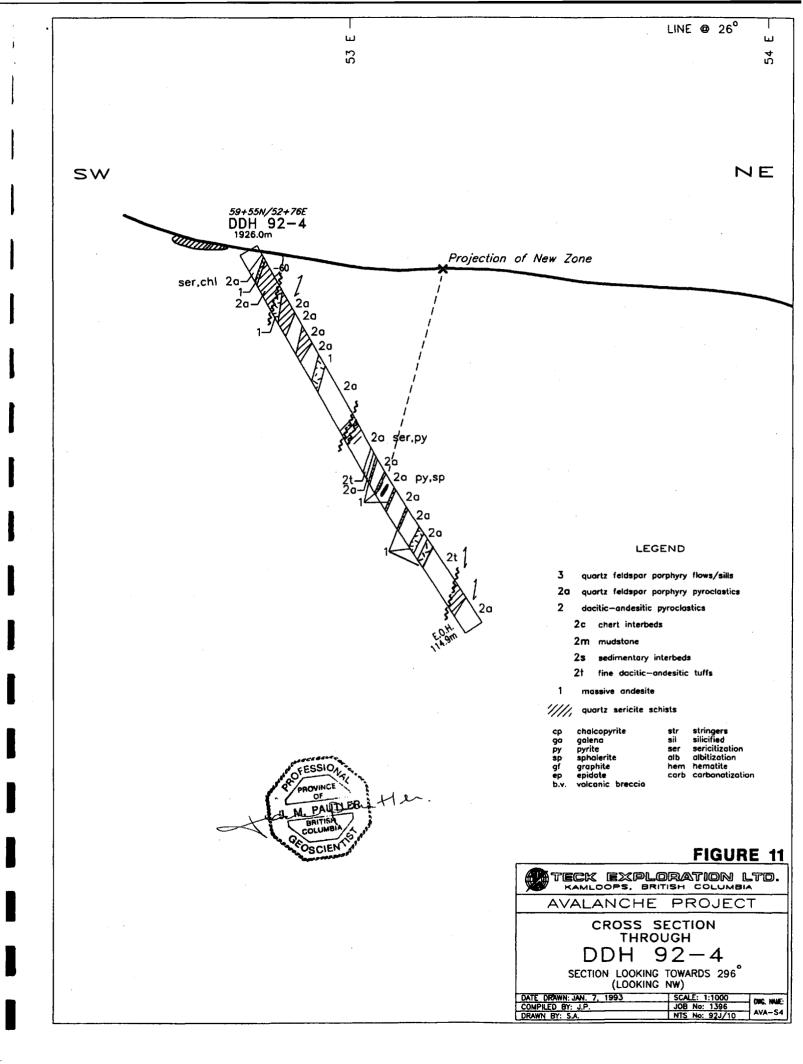
The best results are as follows:

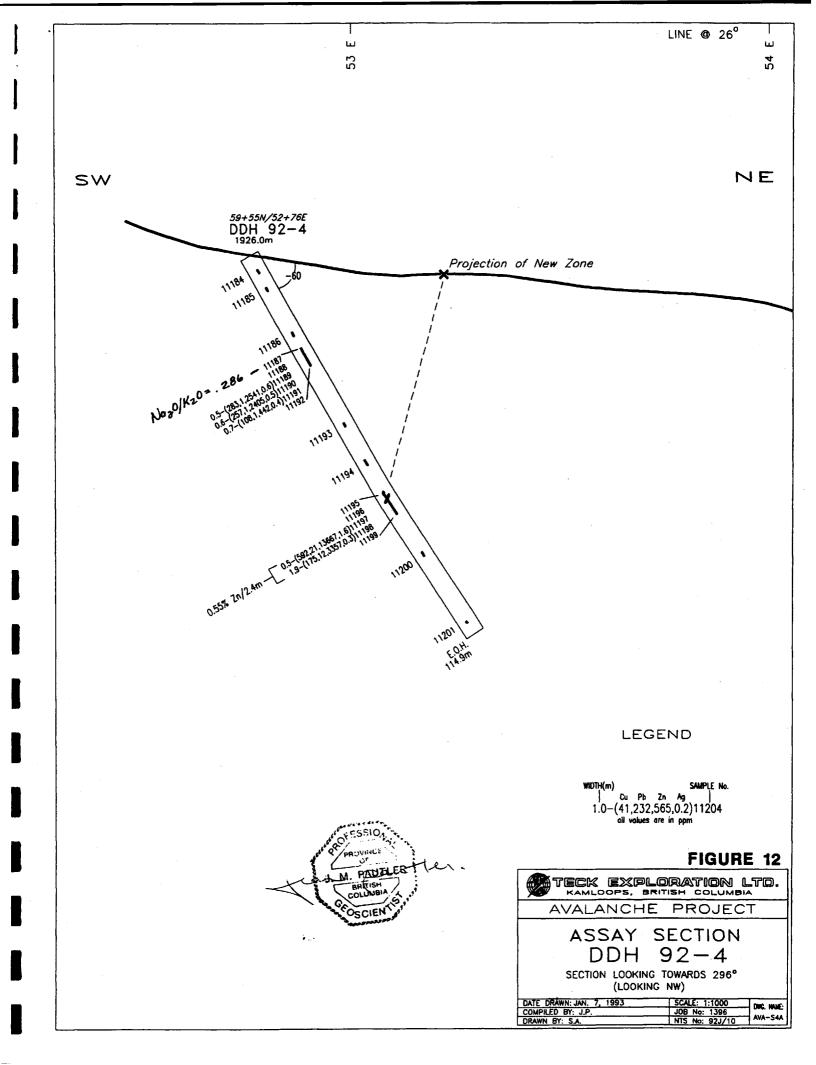
STRINGER ZONE:	29.2 - 31.0m;	1.8m	0.17% Zn, 206 ppm Cu *
includes:	29.2 - 29.7m;	0.5m	2,541 ppm Zn, 283 Cu

HW/NEW ZONE:	72.5 - 74.9m;	2.4m	0.55% Zn *
--------------	---------------	------	------------

includes:

NEW ZONE: 72.5 - 73.0m; 0.5m 13,667 ppm Zn, 592 ppm Cu, 1.6 g/t Ag
HANGINGWALL: 73.0 - 74.9m; 1.9m 3,357 ppm Zn *





AV92 DDH-5 (Figures 13 and 14)

AV92 DDH-5 was drilled to test the "New Zone" 60m along strike to the southeast of AV92 DDH-2 and -3 at approximately 30m down dip. The massive pyrite showing, which appears to represent the strike continuation of the "New Zone", is located another 15m to the southeast.

As in AV92 DDH-2, -3 and -4, the predominant lithology of AV92 DDH-5 is Unit 2a, the quartz eye pyroclastic unit. Fine andesite to dacite tuff with minor andesite lapilli tuff (Unit 2) were intersected from 52.3 to 64.6m and at the bottom of the hole, from 86.7 to 87.5. Andesite dykes are common in the top half of the drill hole.

Two sulfide zones were intersected in AV92 DDH-5. A massive pyrite zone was intersected from 51.3 to 51.7m. The 40 cm wide zone consists of a 10 cm band containing 50% pyrite, caleite with minor chlorite - sericite alteration, followed by a 30 cm chloritic zone with 10% pyrite and less calcite. This massive pyrite intersection appears to correspond to the surface massive pyrite showing which would indicate a very shallow southwest dip for the zone. However, the drill intersection lacks the base metals that are evident in the surface exposure (8,942 ppm Cu, 1,124 ppm Zn, 7.8 ppm Ag - 0.4m). (Not even anomalous base metal values were obtained from the drill intersection.)

The second sulfide zone was intersected from 64.6 to 66.6m. The intersection includes a narrow quartz - carbonate - pyrite band with 10% chalcopyrite, 2% sphalerite and pyrite and chelcopyrite infillings between fragments in a coarse, chloritic and variably siliceous quartz eye lapilit tuff. Maximum values of 705 ppm Zn over 1.4m and 510 ppm Cu over 2.0m were obtained. This zone is somewhat similar to the "New Zone" intersection in AV92 DDH-4. The zone is also enriched in BaO (0.39%) and has a low Na₂O/K₂O ratio of 0.069; characteristics very similar to the "New Zone" intersection in AV92 DDH-3.

It appears that the "New Zone" occurs as a much less discrete zone along strike in both directions from the surface showing.

The best results are as follows:

NEW ZONE?: 64.6 - 65.2m;

0.6m

541 ppm Cu

65.2 - 66.6m;

1.4m

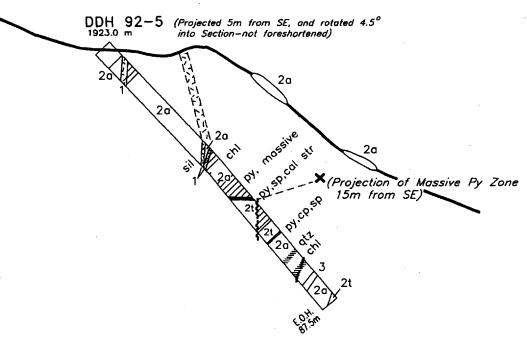
497 ppm Cu, 705 ppm Zn

LINE 59 N

ш 54

SW

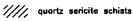
NE



ш



- quartz feldspar porphyry flows/sills
- 2a quartz feldspar porphyry pyroclastics
- dacitic-andesitic pyroclastics
 - 2c chert interbeds
 - 2m mudstone
 - 2s sedimentary interbeds
 - fine docitic-andesitic tuffs
- massive andesite



- chalcopyrite galena
- pyrite sphalerite graphite epidote
- volconic breccia
- stringers silicified sericitization Ser albitization hern hematite carb carbonatization

FIGURE 13



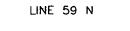
AVALANCHE PROJECT

> CROSS SECTION **THROUGH** DDH 92-5

(LOOKING NW)

TE DRAWN: JAN. 6, 1993	SCALE: 1:1000	DISC. NAME:	l
OMPILED BY: J.P.	JOR NA 1396		ı
RAWN BY: S.A.	NTS No: 92J/10	AVA-S5	l



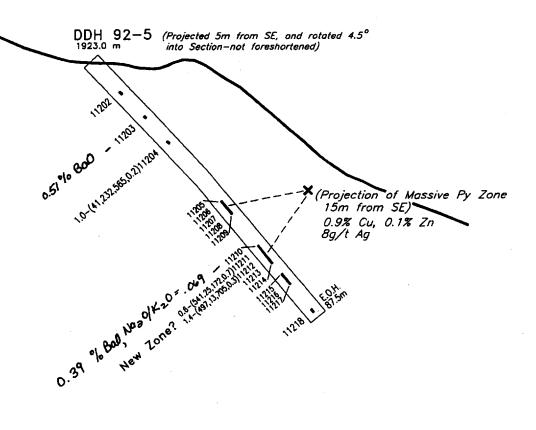


53 E

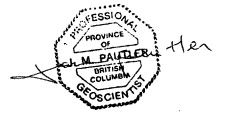
SW

NE

ш



LEGEND



WIDTH(m) SAMPLE No. 1.0-(41,232,565,0.2)11204 all values are in ppm

FIGURE 14



AVALANCHE PROJECT

ASSAY SECTION
DDH 92-5
(LOOKING NW)

DATE DRAWN: JAN. 6, 1993	SCALE: 1:1000	DWG. NAME:
COMPILED BY: J.P.	JOH No: 1396	
DRAWN BY: S.A.	NTS No: 92J/10	AVA-\$5A

AV92 DDH-6 (Figure 15 and 16)

AV92 DDH-6 was drilled to test the down dip extent of the "Upper Horizon", intersected in AV91 DDH-4, and to test stringer type mineralization intersected in the bottom of the same hole.

The "Upper Horizon" in AV91 DDH-4 contained the widest zones of massive sulfide mineralization (consisting of pyrite with lesser chalcopyrite and sphalerite) encountered in the 1991 drill program. Significant intersections on the "Upper Horizon" intersected in AV91 DDH-4 include: 0.2% Zn over 12m including 0.3% Zn across 6m and 0.25% Cu across 2m.

The stringer type mineralization encountered in the bottom of AV91 DDH-4, consisted of pyrite, galena and sphalerite stringera hosted by chloritezed dacitic volcanic rocks. Maximum valuee of 0.1% Cu, 0.17% Zn, 0.05% Pb were obtained. The entire stringer interval grades 0.05 % Zn over 27m, including 10m of 0.08% Zn.

AV92 DDH-6 was very similar to AV91 DDH-4 since it was a seep out on this hole and, as a consequence, yielded good stratigraphic information. Unit 3, quartz feldspar porphyry was intersected in the top of the hole, down to 62.1m, followed by Unit 2a, quartz eye pyroclastic rocks. Unit 2a is highly altered to pyritic quartz sericite schists. From 120.2 to 169.4m fine andesite - dacite tuffs, with minor lapilli tuff (Unit 2) were intersected. Mylonitized zones, probably related to the Grizzly Shear Zone, are evident near the bottom of this section. Graphitic sedimentary rocks (Unit 2s) are present between 193.1 and 219.0m. Altered quartz eye lapilli tuff and crystal tuff of Unit 2a follow the sedimentary unit. Unit 2 occurs exclusively below 243.9m. The main branch of the Grizzly Shear Zone was intersected from 286.8 to 295m. Below 316.9m, Unit 2 oontains large bombs, 10-20 cm in size. Andesite dykes are common throughout the hote.

In the top half of the drill hole, dips of 50-70° NE are evident. The dips steepen up in the vicinity of the Grisziy Shear Zone. Repetition of Unit 2a below the graphitic sedimentary unit appears to be due to relative southwest side down movement along the high angle Grizziy Shear Zone.

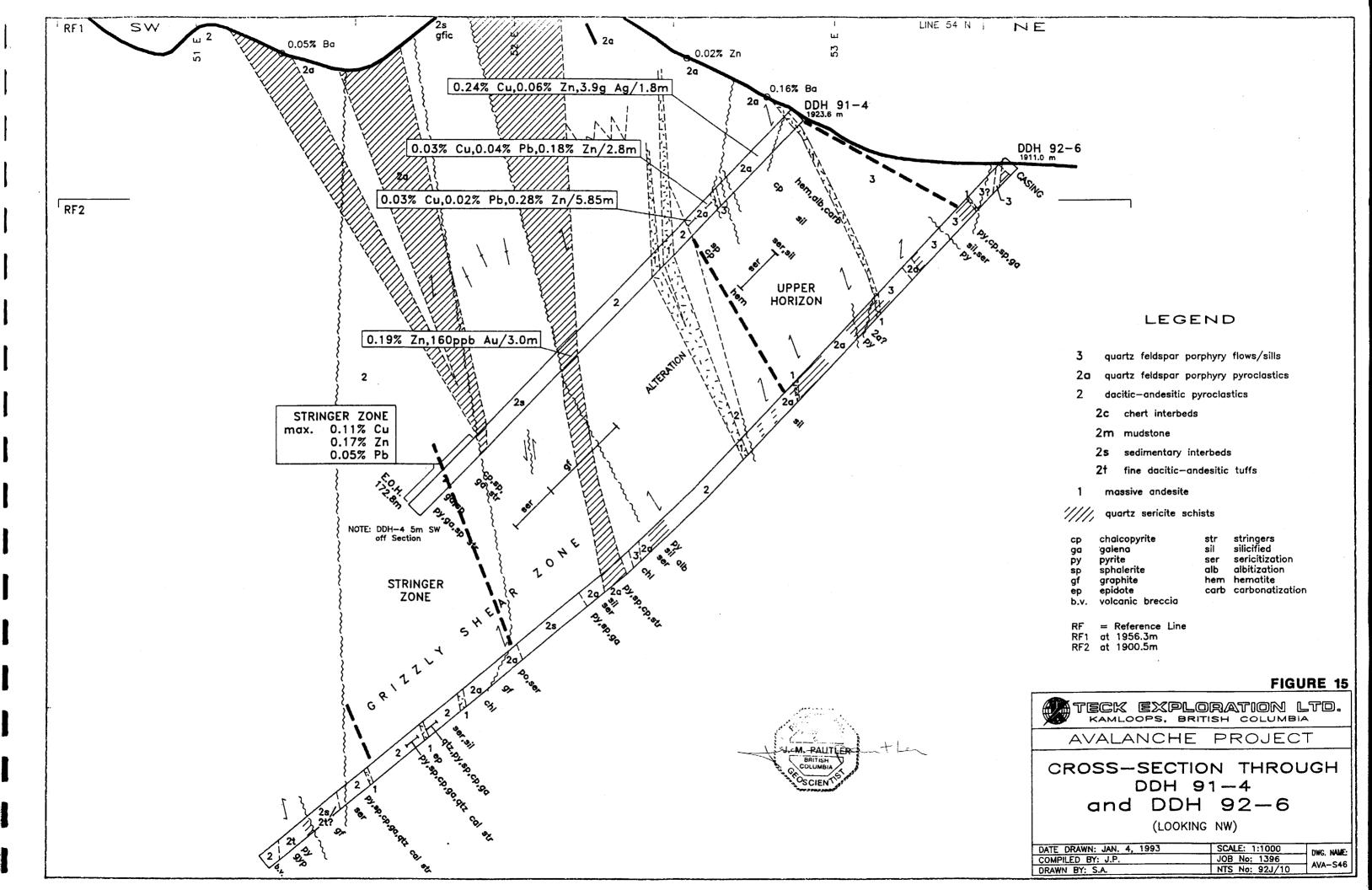
The "Upper Horizon", oncountered in AV91 DDH-4, appears to dissipate in AV92 DDH-6. The only significant intersection was 1.5m of 278 ppm Cu, 790 ppm Pb, 1579 ppm Zn from a silieeous sulfide rich zone.

Better values were obtained from the "Stringer Zone", intersected between 230 and 280m. The zone consists of irregular quartz - calcite - sulfide stringers to 15 cm wide quartz - sulfide veins. Maximum base metal values obtained include 1,932 ppm Cu, 2,996 ppm Pb, 14,127 ppm Zn with 3.9 ppm Ag across 0.5m and 267 ppm Cu, 2,504 ppm Pb, 14,280 ppm Zn with 1.7 ppm Ag across 1.0m. A 12.6m interval within the "Stringer Zone" contains almost 0.2% Zn. Mineralization of the "Stringer Zone" appears to be restricted to abd may be related to the Grizzly Shear Zora.

The bottom half of the hole has several Na_2O/K_2O ratio lows down to 0.003. Some of the low ratios (0.003 and 0.098) correspond to part of the "Stringer Zone" but do not correspond to the base metal enriched portion desorbed above. The Na_2O/K_2O inws appear to be restricted to individual splays of the Grizzly Shear Zone.

The best results are as follows:

UPPER HORIZON:	21.1 - 22.6m;	1.5m	278 ppm Cu, 790 ppm Pb, 1,579 ppm Zn
STRINGER ZONE:	230.2-230.7m;	0.5m	1,932 ppm Cu, 2,996 ppm Pb, 14,127 ppm Zn, 3.9 ppm Ag
	253.3-265.0m;	12.6m	1,796 ppm Zn
includes:	253.3-254.3m;	1.0m	267 ppm Cu, 2,504 ppm Pb, 14,280 ppm Zn, 1.7 ppm Ag



AV92 DDH-7 (Figures 17 and 18)

AV92 DDH-7 was drilled to test the southeast strike extent of the "Upper Horizon" intersected in AV91 DDH-4 and to test the down dip extent of the "Lower Horizon" intersected in AV91 DDH-5 and in AV92 DDH-1.

The "Upper Horizon" in AV91 DDH-4 contained the widest zones of massive sulfide mineralization encountered in the 1991 drill program. The 1991 lithogeochemical analyses indicate a more proximal VMS alteration signature southeast of AV91 DDH-4 than towards the northwest.

The AV91 DDH-5 intersection of the "Lower Horizon" (17m of 0.75% Zn) constituted the most significant intersection of the 1991 drill program. In AV92 DDH-1 the "Lower Horizon" appears to increase in thickness from AV91 DDH-5, but only minor base metal mineralization was encountered. The only remaining potential for this horizon is down dip since the "Lower Horizon" displays a more distal signature along strike to the southeast and diminished base metal values along strike to the northwest.

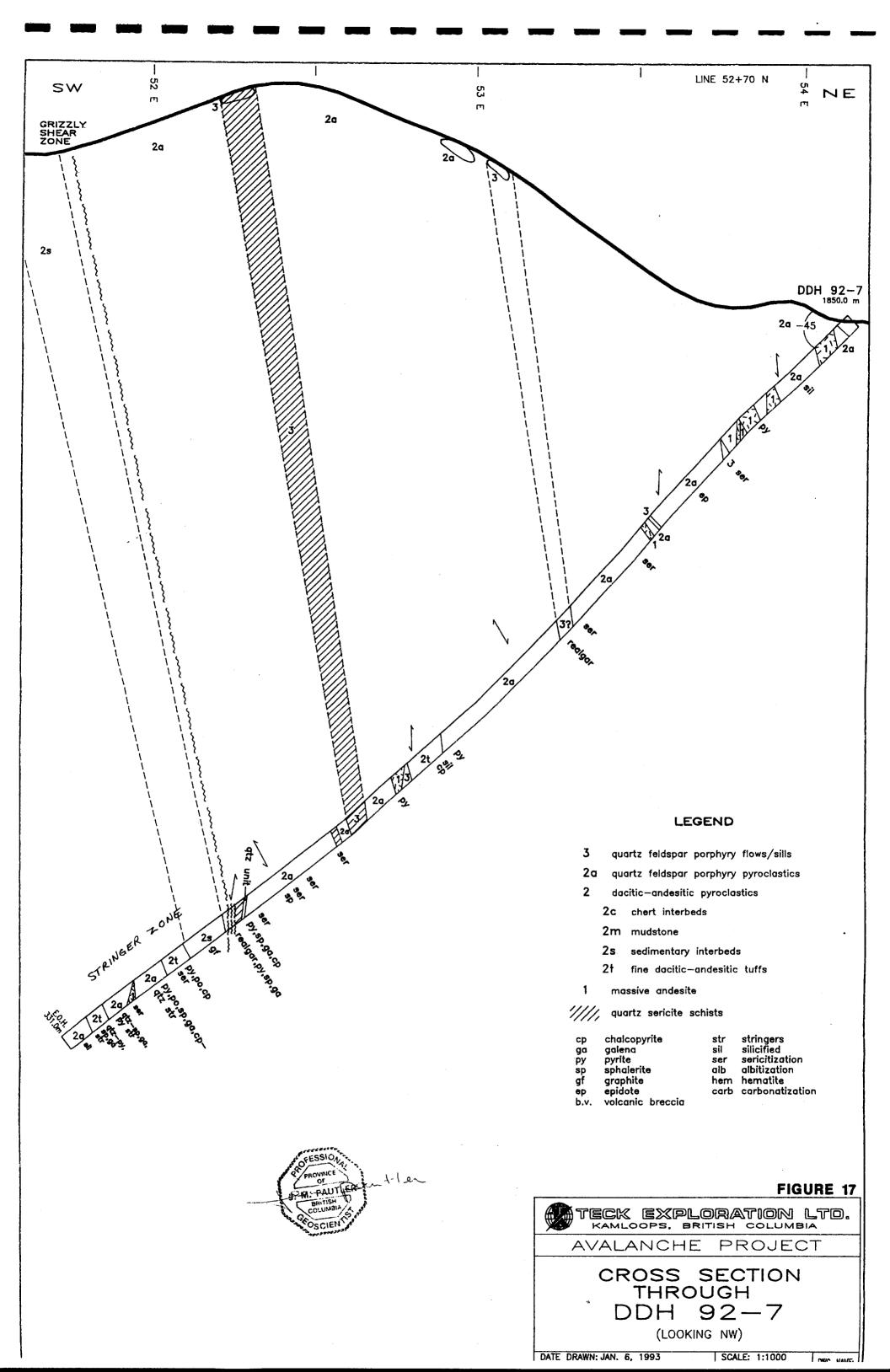
AV92 DDH-7 primarily consists of Unit 2a, quartz eye pyroclastic rocks. Graphitic sedimentary rocks (Unit 2s) were intersected from 269.8 to 283.7m, immediately below and within the Grizzly Shear Zone. The shear zone was marked by mylonite, clay gouge zones and the presence of realgar. Intervals of fine andesite to dacite tuffs (Unit 2) were intersected below 298.7m and from 182.7 to 196.2m. Andesite dykes are common throughout the hole but sills of Unit 3 are less common.

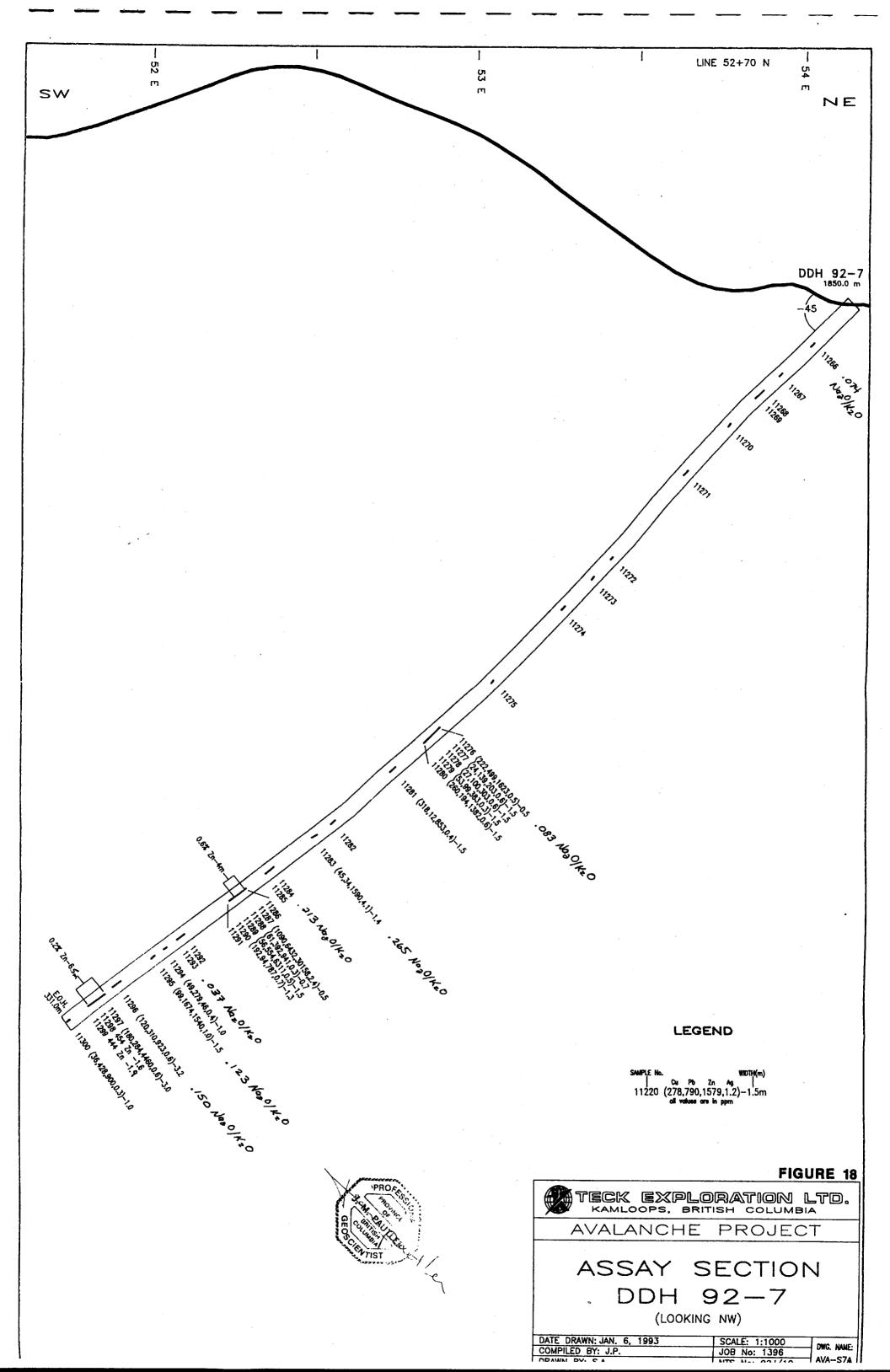
The "Upper Horizon" was not intersected in AV92 DDH-7. However, stringer type mineralization, as in AV92 DDH-6, was intersected proximal to the Grizzly Shear Zone. Quartz - calcite - sulfide stringers and up to 25 cm wide quartz - suifide veins were intersected between 262 and 320m. Significant intersections include 0.6% Zn over 4m and 0.2% Zn over 6m. The highest individual sample interval returned 1,090 ppm Cu, 6,432 ppm Pb, 30,158 ppm Zn, 2.4 ppm Ag across 0.5m. Low Na₂O/K₂O ratios down to 0.037 are associated with this zone.

Minor quartz - calcite - sulfide stringers were also encountered between 182.7 and 189.2m. Maximum values are 260 ppm Cu, 499 ppm Pb, 1,623 ppm Zn across 0.5 - 1.5m widths with a Na_2O/K_2O ratio as low as 0.083.

The best results are as follows:

	182.7-183.2m;	0.5m	499 pcm Pb, 1623 Zn
STRINGER ZONE:	262.0-266.0m;	4.0m	0.6% Zn
includes:	262.0-262.5m;	0.5m	1,090 ppm Cu, 6,432 ppm Pb, 30,158 ppm Zn, 2.4 ppm Ag
	315.4-321.9m;	6.5m	0.2% Zn *
includes:	315.4-318.4m;	3.0m	4,460 ppm Zn





AV92 DDH-8 (Figures 19 and 20)

AV92 DDH-8 was drilled to test pyrite, chalcopyrite, sphalerite and galena mineralization associated with graphitic volcanic derived sedimentary beds at the main felsic (dacite pyroclastic) /mafic (andesite porphyry) volcanic contact. Surface mineralization contains up to 4,674 ppm Cu, 3,091 ppm Zn and 792 ppm Pb across widths up to 1m (1990 program).

AV92 DDH-8 almost exclusively consists of dacitic to andesitic pyroclastic rocks (Unit 2). Ash tuffs are most prevalent with 5-10m intervals of volcanic breccia and tuff-breccia. A graphitic sedimentary interbed (Unit 2s) was intersected from 103 to 107m. Andesite dykes and quartz feldspar porphyry sills are abundant. Numerous faults are evident resulting in very rubbly core recovery. Due to a lack of alteration/mineralization in the bottom of the hole, AV92 DDH-8 was not extended to reach the andesite porphyry (Unit 1) contact.

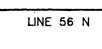
Pyritic zones up to 15 cm wide, hosted by the ash tuffs and sedimentary interbeds, were intersected. Two of the intervals contained significant base metals. At 70m, a 1.5m interval of fine tuffs, containing a 15cm highly pyritic interval, ran 1860 ppm Zn with 397 ppm Cu. The zone appears to be fault related and may be the extension of the surface mineralization.

The second anomalous interval was obtained from a 10 cm wide pyritic zone hosted by the graphitic sedimentary unit. A 1.0m sample across the zone contained 846 ppm Cu with an associated low Na_2O/K_2O ratio of 0.003. This zone may also have some relationship to the surface mineralization. However the nature of the relationship is somewhat unclear.

A sericitic, pyritic, \pm chloritic and graphitic alteration zone from 165 to 170m contains up to 760 ppm Zn with Na₂O/K₂O ratios down to 0.042. Sericitic tuffs at the bottom of the hole (182m) had a Na₂O/K₂O ratio of 0.003.

The best results am as felipws:

68.6 - 70.1m;	1.5m	397 ppm Cu, 1350 ppm Zr
105.8-106.8tn;	1.8m	846 ppm Cu
169.5-170.1m;	0.6m	760 ppm Zn



SW

ΝE

LEGEND

- quartz feldspar porphyry flows/sills
- quartz feldspar porphyry pyroclastics
- dacitic-andesitic pyroclastics
 - 2c chert interbeds
 - 2m mudstone
- 2s sedimentary interbeds
- fine dacitic-andesitic tuffs
- massive andesite

////, quartz sericite schists

ср	chalcopyrite	· str	stringers
ga	galena	sil	silicified
ру	pyrite	ser	sericitization
sp	sphalerite	aib	albitization
gf	graphite	hem	hematite
ер	epidote	carb	carbonatization

ep epidote b.v. volcanic breccia

FIGURE 19



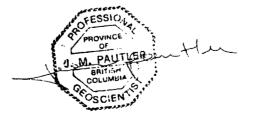
TECK EXPLORATION LTD. KAMLOOPS, BRITISH COLUMBIA

AVALANCHE PROJECT

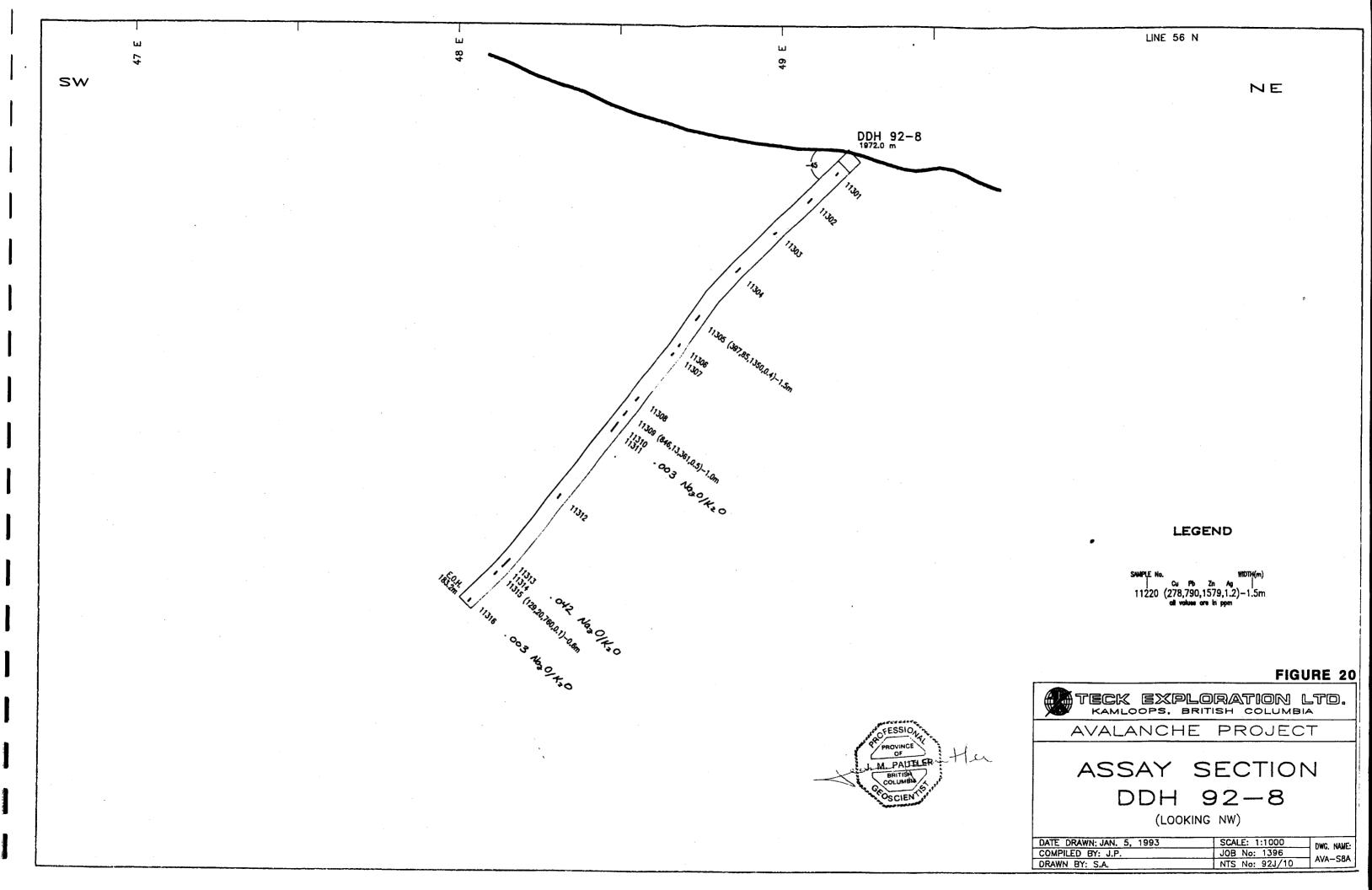
CROSS SECTION THROUGH DDH 92-8

(LOOKING NW)

DATE DRAWN: JAN. 5, 1993	SCALE: 1:1000	DWG. NAME:
COMPILED BY: J.P.	JOB No: 1396	
DRAWN BY: S.A.	NTS No: 92J/10	AVA-S8



DDH 92-8



6. CONCLUSIONS AND RECOMMENDATIONS

Drill holes AV92 DDH-2 to -5 intersected the "New Zone" which grades 33% Zn, 6% Cu, 25 g/t Ag over 35 cm on surface. Unfortunately, The "New Zone" dissipates along strike in both directions as well as down dip. The down dip and down dip northwest strike extent intersections are quite similar in grade (approximately 1.5% Zn, 0.2% Cu across 0.5m). The surfane southeast strike extent revealed Cu grades to 0.9% across 0.4m. However, the down dip southeast strike extent was virtually lacking in base metals. Although the continuity of the zone is good (can be traced 130m along strike and 70m down dip), the grade decreases tremendously in all directions from the main surface exposure and the zone never reaches significant widths.

AV92 DDH-6 and 7 tested the "Upper Horizon", previously intersected in AV91 DDH-4 and -2. The horizon was intersected in AV92 DDH-6 but with insignificant base metal values. The horizon was not intersected in AV92 DDH-7. The base metal intersections in AV91 DDH-4 (12m of 0.2%) and AV92 DDH-6 may represent the southeast strike extent of the "New Zone". This supports evidence from AV92 DDH-2 to -5 that the "New Zone" becomes less discrete and base metal mineralization more dispersed away from the surface showing.

AV92 DDH-1, -6 and -7 tested the "Lower Horizon". AV92 DDH-1 more specifically intersected the down dip extent of a 17m intersection of 0.75% Zn from AV91 DDH-5. Although the horizon was intersected, it appears to thicken out but the base metal values disperse. The "Lower Horizon" intersections in AV92 DDH-1 and AV91 DDH-5 appear to be related to a subparallel fault approximately 700m southwest of the Grizzly Shear Zone that dips steeply northeast. AV92 DDH-6 and -7 also tested stringer type mineralization intersected in the bottom of AV91 DDH-4 and the middle of AV91 DDH-2, thought to be related to the "Lower Horizon". The stringer type mineralization encountered appears to be related to the Grizzly Shear Zone. Stringer type mineralization from the bottom of AV91 DDH-10 also appears to be related to this structure. Overall, stringer type mineralization intersected in AV92 DDH-6, -7 and AV91 DDH-2, -4, -10 appears to be related to the Grizzly Shear Zone.

Despite the strong structural relationship to the mineralization, the felsic volcanic package is favourably altered and base metal enriched independently from the fault zones. However, it appears that the sulfides lacked an adequate depositional environment and as a result, the sulfides were dispersed throughout the hosting stratigraphy. As a result, only small high grade peds and broad base metal enriched zones are evident. Consequently, no further work is recommended.